

CLAIMS

1. A slide bearing assembly (12) comprising at least a shaft (22) and a bushing (16), said bushing (16) being made of a porous sintered material having a large number of pores (25), wherein said bushing (16) is impregnated with a lubricant (24) containing 2.0 to 30 wt% of solid lubricating fine particles (26) made of at least one selected from among MoS_2 , WS_2 , and hexagonal BN, and wherein said shaft (22) and said bushing (16) are used at surface pressure not lower than 6 Kgf/mm² and sliding speed in the range of 2 to 5 cm/sec.

2. A slide bearing assembly (12) comprising at least a shaft (22) and a bushing (16), said bushing (16) being made of a porous sintered material having a large number of pores (25), wherein said bushing (16) is impregnated with a lubricant (24) containing 3.0 to 5.0 wt% of solid lubricating fine particles (26) made of graphite, and wherein said shaft (22) and said bushing (16) are used at surface pressure not lower than 6 Kgf/mm² and sliding speed in the range of 2 to 5 cm/sec.

3. A slide bearing assembly according to Claim 1 or 2, wherein viscosity of the lubricant (24) containing the solid lubricating fine particles (26) is in the range of 56 to 1500 cSt (at 25.5°C).

4. A slide bearing assembly according to Claim 1 or 2, wherein said bushing (16) is made of a composite sintered alloy with a porosity of 5 to 30 vol%, said large number of pores (25) are communicated with one another, and said bushing (16) is subjected to surface modification treatment using at least one selected from among carburizing, nitriding, and sulphurize-nitriding.

5. A slide bearing assembly according to Claim 1 or 2, wherein the solid lubricating fine particles (26) have sizes being small enough to prevent clogging of the pores (25) of said bushing (16).

6. A slide bearing assembly according to Claim 1 or 2, wherein said shaft (22) is subjected to surface modification treatment by performing at least one kind of treatment selected from among carburizing, induction hardening, laser hardening and nitriding, and then chemical conversion or sulfurizing treatment.

7. A slide bearing made of a porous sintered material having a large number of pores (25) and impregnated with a lubricant containing 2.0 to 30 wt% of solid lubricating fine particles (26) made of at least one selected from among MoS_2 , WS_2 , and hexagonal BN, said bearing being used at surface pressure not lower than 6 Kgf/mm² and sliding speed in the range of 2 to 5 cm/sec.

8. A slide bearing made of a porous sintered material having a large number of pores (25) and impregnated with a lubricant containing 3.0 to 5.0 wt% of solid lubricating fine particles (26) made of graphite, said bearing being used at surface pressure not lower than 6 Kgf/mm² and sliding speed in the range of 2 to 5 cm/sec.

9. A slide bearing according to Claim 7 or 8, wherein viscosity of the lubricant (24) containing the solid lubricating fine particles (26) is in the range of 56 cSt to 1500 cSt (at 25.5°C).

10. A slide bearing according to Claim 7 or 8, wherein said bearing is made of a composite sintered alloy with a porosity of 5 to 30 vol%, said large number of pores (25) are communicated with one another, and said bearing is subjected to surface modification treatment using at least one selected from among carburizing, nitriding, and sulphurize-nitriding.

11. A slide bearing according to Claim 7 or 8, wherein the solid lubricating fine particles (26) have sizes being small enough to prevent clogging of the pores (25).

12. A slide bearing according to Claim 7 or 8, wherein said bearing is used in combination with a shaft (22) subjected to surface modification treatment by performing at least one kind of treatment selected from among carburizing,

induction hardening, laser hardening and nitriding, and then chemical conversion or sulfurizing treatment.

13. A slide bearing according to Claim 7 or 8, wherein said bearing is used as a bearing for a front component of an excavator.

14. A slide bearing according to Claim 7 or 8, wherein said bearing is used as a bearing for an arm of a crane.